

A. Nelson

ENTERED



1600

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/075,375E

DATE: 07/22/2003

TIME: 09:00:38

Input Set : N:\EBONY'S\US09075375E.raw.txt

Output Set: N:\CRF4\07222003\I075375E.raw

C--> 1 <110> APPLICANT: Yamamoto, Harry Y
 2 Bugos, Robert C.
 3 Rockholm, David C
 4 <120> TITLE OF INVENTION: PLANT VDE GENES AND METHODS RELATED THERETO
 5 <130> FILE REFERENCE: 15619/03/US
 6 <140> **CURRENT APPLICATION NUMBER: US/09/075,375E**
 7 <141> CURRENT FILING DATE: 1998-05-07
 8 <150> PRIOR APPLICATION NUMBER: US08/747,574
 9 <151> PRIOR FILING DATE: 1996-11-07
 10 <150> PRIOR APPLICATION NUMBER: PCT/US96/18291
 11 <151> PRIOR FILING DATE: 1996-11-07
 12 <150> PRIOR APPLICATION NUMBER: US 60/023,502
 13 <151> PRIOR FILING DATE: 1996-08-06
 14 <150> PRIOR APPLICATION NUMBER: US 60/006,315
 15 <151> PRIOR FILING DATE: 1995-11-07
 16 <160> NUMBER OF SEQ ID NOS: 9
 17 <170> SOFTWARE: PatentIn version 3.2
 19 <210> SEQ ID NO: 1
 20 <211> LENGTH: 1981
 21 <212> TYPE: DNA
 22 <213> ORGANISM: Lactuca sativa
 23 <400> SEQUENCE: 1
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 26 cacttcgaac gctacaatgt ttgaaaaaag acgcagattt tacaaaagacg gagaagataa 180
 27 taagcttcaa gtactccgat cgtcagggtg cctttggaag ccaacaaaact ggctatggct 240
 28 ctttctcttc aactgtatt tctctgcaaa gaggaagccc tcaatttata tgcaagatca 300
 29 ccatgtaatg aaaggtttca caggagtgga caacctccta ccaacataat catgatgaaa 360
 30 attcgatcca acaatggata ttttaattct ttccggttgt ttacatctta taagacaagt 420
 31 tctttctcag attctagcca ttgcaaggat aaatctcaga tatgcagcat cgatacaagt 480
 32 tttgaggaaa tacaaagatt tgatctcaaa aggggcatga ctttgattct tgaaaagcaa 540
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 34 gttgatgccg ttgatgctct taaaacttgt gcttgtttac tcaaagaatg caggattgag 660
 35 cttgcaaaat gtatagcaaa cccatcttgt gcggcaaacg ttgcctgtct acagacttgc 720
 36 aacaatcgtc ctgacgagac cgaatgtcag ataaaatgtg gtgacttggt cgaaaacagt 780
 37 gtgggtggacc aattcaacga gtgtgcggtt tcccgaaga aatgtgtgcc ccggaaatcg 840
 38 gatgtgggtg aattcccgtt tccggtatcg aatgcagtgg ttcaaaattt taacatgaaa 900
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 40 tgtcaacttc atgagtttca tatggaaaat gataaacttg ttgggaactt aacatggcgc 1020
 41 ataaaaactt tggatgggtg tttctttact cgatctgctg tgcaaacatt tgttcaagat 1080
 42 ccagatcttc ctggagcact ttataatcat gacaatgagt ttcttcaact ccaagatgac 1140
 43 tggtagatat tatcttccca aatcgaaaac aaacccgatg attacatatt cgtatactac 1200
 44 cgaggtcgaa acgacgcatg ggatggatag ggtgggtccg tgatctacac ccgaagcccg 1260

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45  acactccccg aatcgatcat cccaaacct caaaaagcag ccaaatccgt gggtcgagac 1320
46  tttaacaatt tcataacaac cgacaatagt tgtgggcctg agcctccatt ggtggaaagg 1380
47  cttgagaaaa cagcggaaga gggcgagaag ttgttgataa aagaagctgt agagatagaa 1440
48  gaagagggtt aaaaagaggt ggagaagggt agagatactg agatgacttt gtttcagagg 1500
49  ttgcttgaag ggtttaagga gttgcaacaa gatgaagaga attttgtgag ggagttgagt 1560
50  aaagaagaga aggaaattct gaatgaactt caaatggaag cgactgaagt tgaaaagctt 1620
51  tttgggcgcg cgttaccgat taggaaactt agataaattt cgatgattga ttcagacaat 1680
52  atatatagtc atatggatta tgtagatact agagaaaacc caaaaaaact tttgtatagc 1740
53  tgataaacgt gtttgtgatt tgtttattgg cttaaaattg tagaatagct tttttaattc 1800
54  tttaaaaaaa aattgattgt ctattggtag ccaagagggt cagcaaaaga ctgaaagggt 1860
55  cttgccggtt tgcgggttag gccaaatttt ttggggcggg atcgggtctg atcgggtttt 1920
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57  a 1981

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59 <210> SEQ ID NO: 2

60 <211> LENGTH: 1412

61 <212> TYPE: PRT

62 <213> ORGANISM: Lactuca sativa

63 <400> SEQUENCE: 2

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64  Met Ala Leu Ser Leu His Thr Val Phe Leu Cys Lys Glu Glu Ala Leu
65  1 5 10 15
66  Asn Leu Tyr Ala Arg Ser Pro Cys Asn Glu Arg Phe His Arg Ser Gly
67  20 25 30
68  Gln Pro Pro Thr Asn Ile Ile Met Met Lys Ile Arg Ser Asn Asn Gly
69  35 40 45
70  Tyr Phe Asn Ser Phe Arg Leu Phe Thr Ser Tyr Lys Thr Ser Ser Phe
71  50 55 60
72  Ser Asp Ser Ser His Cys Lys Asp Lys Ser Gln Ile Cys Ser Ile Asp
73  65 70 75 80
74  Thr Ser Phe Glu Glu Ile Gln Arg Phe Asp Leu Lys Arg Gly Met Thr
75  85 90 95
76  Leu Ile Leu Glu Lys Gln Trp Arg Gln Phe Ile Gln Leu Ala Ile Val
77  100 105 110
78  Leu Val Cys Thr Phe Val Ile Val Pro Arg Val Asp Ala Val Asp Ala
79  115 120 125
80  Leu Lys Thr Cys Ala Cys Leu Lys Glu Cys Arg Ile Glu Leu Ala
81  130 135 140
82  Lys Cys Ile Ala Asn Pro Ser Cys Ala Ala Asn Val Ala Cys Leu Gln
83  145 150 155 160
84  Thr Cys Asn Asn Arg Pro Asp Glu Thr Glu Cys Gln Ile Lys Cys Gly
85  165 170 175
86  Asp Leu Phe Glu Asn Ser Val Val Asp Gln Phe Asn Glu Cys Ala Val
87  180 185 190
88  Ser Arg Lys Lys Cys Val Pro Arg Lys Ser Asp Val Gly Glu Phe Pro
89  195 200 205
90  Val Pro Asp Arg Asn Ala Val Val Gln Asn Phe Asn Met Lys Asp Phe
91  210 215 220
92  Ser Gly Lys Trp Tyr Ile Thr Ser Gly Leu Asn Pro Thr Phe Asp Ala
93  225 230 235 240
94  Phe Asp Cys Gln Leu His Glu Phe His Met Glu Asn Asp Lys Leu Val

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95          245          250          255
96 Gly Asn Leu Thr Trp Arg Ile Lys Thr Leu Asp Gly Gly Phe Phe Thr
97          260          265          270
98 Arg Ser Ala Val Gln Thr Phe Val Gln Asp Pro Asp Leu Pro Gly Ala
99          275          280          285
100 Leu Tyr Asn His Asp Asn Glu Phe Leu His Tyr Gln Asp Asp Trp Tyr
101          290          295          300
102 Ile Leu Ser Ser Gln Ile Glu Asn Lys Pro Asp Asp Tyr Ile Phe Val
103          305          310          315          320
104 Tyr Tyr Arg Gly Arg Asn Asp Ala Trp Asp Gly Tyr Gly Gly Ser Val
105          325          330          335
106 Ile Tyr Thr Arg Ser Pro Thr Leu Pro Glu Ser Ile Ile Pro Asn Leu
107          340          345          350
108 Gln Lys Ala Ala Lys Ser Val Gly Arg Asp Phe Asn Asn Phe Ile Thr
109          355          360          365
110 Thr Asp Asn Ser Cys Gly Pro Glu Pro Pro Leu Val Glu Arg Leu Glu
111          370          375          380
112 Lys Thr Ala Glu Glu Gly Glu Lys Leu Leu Ile Lys Glu Ala Val Glu
113          385          390          395          400
114 Ile Glu Glu Glu Val Glu Lys Glu Val Glu Lys Val Arg Asp Thr Glu
115          405          410          415
116 Met Thr Leu Phe Gln Arg Leu Leu Glu Gly Phe Lys Glu Leu Gln Gln
117          420          425          430
118 Asp Glu Glu Asn Phe Val Arg Glu Leu Ser Lys Glu Glu Lys Glu Ile
119          435          440          445
120 Leu Asn Glu Leu Gln Met Glu Ala Thr Glu Val Glu Lys Leu Phe Gly
121          450          455          460
122 Arg Ala Leu Pro Ile Arg Lys Leu Arg Met Ala Leu Ala Pro His Ser
123          465          470          475          480
124 Asn Phe Leu Ala Asn His Glu Thr Ile Lys Tyr Tyr Val Gly Ser Lys
125          485          490          495
126 Leu Pro Gly His Lys Arg Phe Ser Trp Gly Trp Glu Asp Tyr Phe Gly
127          500          505          510
128 Ser Ile Val Val Ala Lys Ile Cys Ser Ser Arg Arg Ile Pro Arg Tyr
129          515          520          525
130 Phe Arg Lys Ser Pro Arg Ile Cys Cys Gly Leu Asp Ser Arg Gly Leu
131          530          535          540
132 Gln Leu Phe Ser His Gly Lys His Asn Leu Ser Pro Ala His Ser Ile
133          545          550          555          560
134 Asn Gln Asn Val Pro Lys Gly Asn Ser Gly Cys Lys Phe Pro Lys Asp
135          565          570          575
136 Val Ala Leu Met Val Trp Glu Lys Trp Gly Gln Phe Ala Lys Thr Ala
137          580          585          590
138 Ile Val Ala Ile Phe Ile Leu Ser Val Ala Ser Lys Ala Asp Ala Val
139          595          600          605
140 Asp Ala Leu Lys Thr Cys Thr Cys Leu Leu Lys Glu Cys Arg Leu Glu
141          610          615          620
142 Leu Ala Lys Cys Ile Ser Asn Pro Ala Cys Ala Ala Asn Val Ala Cys
143          625          630          635          640

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144   Leu Gln Thr Cys Asn Asn Arg Pro Asp Glu Thr Glu Cys Gln Ile Lys
145               645                      650                      655
146   Cys Gly Asp Leu Phe Glu Asn Ser Val Val Asp Glu Phe Asn Glu Cys
147               660                      665                      670
148   Ala Val Ser Arg Lys Lys Cys Val Pro Arg Lys Ser Asp Val Gly Asp
149               675                      680                      685
150   Phe Pro Val Pro Asp Pro Ser Val Leu Val Gln Lys Phe Asp Met Lys
151               690                      695                      700
152   Asp Phe Ser Gly Lys Trp Phe Ile Thr Arg Gly Leu Asn Pro Thr Phe
153   705               710                      715                      720
154   Asp Ala Phe Asp Cys Gln Leu His Glu Phe His Thr Glu Glu Asn Lys
155               725                      730                      735
156   Leu Val Gly Asn Leu Ser Trp Arg Ile Arg Thr Pro Asp Gly Gly Phe
157               740                      745                      750
158   Phe Thr Arg Ser Ala Val Gln Lys Phe Val Gln Asp Pro Lys Tyr Pro
159               755                      760                      765
160   Gly Ile Leu Tyr Asn His Asp Asn Glu Tyr Leu Leu Tyr Gln Asp Asp
161   770               775                      780
162   Trp Tyr Ile Leu Ser Ser Lys Val Glu Asn Ser Pro Glu Asp Tyr Ile
163   785               790                      795                      800
164   Phe Val Tyr Tyr Lys Gly Arg Asn Asp Ala Trp Asp Gly Tyr Gly Gly
165               805                      810                      815
166   Ser Val Leu Tyr Thr Arg Ser Ala Val Leu Pro Glu Ser Ile Ile Pro
167               820                      825                      830
168   Glu Leu Gln Thr Ala Ala Gln Lys Val Gly Arg Asp Phe Asn Thr Phe
169               835                      840                      845
170   Ile Lys Thr Asp Asn Thr Cys Gly Pro Glu Pro Pro Leu Val Glu Arg
171   850               855                      860
172   Leu Glu Lys Lys Val Glu Glu Gly Glu Arg Thr Ile Ile Lys Glu Val
173   865               870                      875                      880
174   Glu Glu Ile Glu Glu Glu Val Glu Lys Val Arg Asp Lys Glu Val Thr
175               885                      890                      895
176   Leu Phe Ser Lys Leu Phe Glu Gly Phe Lys Glu Leu Gln Arg Asp Glu
177               900                      905                      910
178   Glu Asn Phe Leu Arg Glu Leu Ser Lys Glu Glu Met Asp Val Leu Asp
179               915                      920                      925
180   Gly Leu Lys Met Glu Ala Thr Glu Val Glu Lys Leu Phe Gly Arg Ala
181   930               935                      940
182   Leu Pro Ile Arg Lys Leu Met Ala Val Ala Thr His Cys Phe Thr Ser
183   945               950                      955                      960
184   Pro Cys His Asp Arg Ile Arg Phe Phe Ser Ser Asp Asp Gly Ile Gly
185               965                      970                      975
186   Arg Leu Gly Ile Thr Arg Lys Arg Ile Asn Gly Thr Phe Leu Leu Lys
187               980                      985                      990
188   Ile Leu Pro Pro Ile Gln Ser Ala Asp Leu Arg Thr Thr Gly Gly Arg
189               995                      1000                      1005
190   Ser Ser Arg Pro Leu Ser Ala Phe Arg Ser Gly Phe Ser Lys Gly
191   1010               1015                      1020
192   Ile Phe Asp Ile Val Pro Leu Pro Ser Lys Asn Glu Leu Lys Glu

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196	Ala	Phe	Leu	Ile	Val	Pro	Ser	Ala	Asp	Ala	Val	Asp	Ala	Leu	Lys
197		1055		1060		1065									
198	Thr	Cys	Ala	Cys	Leu	Leu	Lys	Gly	Cys	Arg	Ile	Glu	Leu	Ala	Lys
199		1070		1075		1080									
200	Cys	Ile	Ala	Asn	Pro	Ala	Cys	Ala	Ala	Asn	Val	Ala	Cys	Leu	Gln
201		1085		1090		1095									
202	Thr	Cys	Asn	Asn	Arg	Pro	Asp	Glu	Thr	Glu	Cys	Gln	Ile	Lys	Cys
203		1100		1105		1110									
204	Gly	Asp	Leu	Phe	Glu	Asn	Ser	Val	Val	Asp	Glu	Phe	Asn	Glu	Cys
205		1115		1120		1125									
206	Ala	Val	Ser	Arg	Lys	Lys	Cys	Val	Pro	Arg	Lys	Ser	Asp	Leu	Gly
207		1130		1135		1140									
208	Glu	Phe	Pro	Ala	Pro	Asp	Pro	Ser	Val	Leu	Val	Gln	Asn	Phe	Asn
209		1145		1150		1155									
210	Ile	Ser	Asp	Phe	Asn	Gly	Lys	Trp	Tyr	Ile	Thr	Ser	Gly	Leu	Asn
211		1160		1165		1170									
212	Pro	Thr	Phe	Asp	Ala	Phe	Asp	Cys	Gln	Leu	His	Glu	Phe	His	Thr
213		1175		1180		1185									
214	Glu	Gly	Asp	Asn	Lys	Leu	Val	Gly	Asn	Ile	Ser	Trp	Arg	Ile	Lys
215		1190		1195		1200									
216	Thr	Leu	Asp	Ser	Gly	Phe	Phe	Thr	Arg	Ser	Ala	Val	Gln	Lys	Phe
217		1205		1210		1215									
218	Val	Gln	Asp	Pro	Asn	Gln	Pro	Gly	Val	Leu	Tyr	Asn	His	Asp	Asn
219		1220		1225		1230									
220	Glu	Tyr	Leu	His	Tyr	Gln	Asp	Asp	Trp	Tyr	Ile	Leu	Ser	Ser	Lys
221		1235		1240		1245									
222	Ile	Glu	Asn	Lys	Pro	Glu	Asp	Tyr	Ile	Phe	Val	Tyr	Tyr	Arg	Gly
223		1250		1255		1260									
224	Arg	Asn	Asp	Ala	Trp	Asp	Gly	Tyr	Gly	Gly	Ala	Val	Val	Tyr	Thr
225		1265		1270		1275									
226	Arg	Ser	Ser	Val	Leu	Pro	Asn	Ser	Ile	Ile	Pro	Glu	Leu	Glu	Lys
227		1280		1285		1290									
228	Ala	Ala	Lys	Ser	Ile	Gly	Arg	Asp	Phe	Ser	Thr	Phe	Ile	Arg	Thr
229		1295		1300		1305									
230	Asp	Asn	Thr	Cys	Gly	Pro	Glu	Pro	Ala	Leu	Val	Glu	Arg	Ile	Glu
231		1310		1315		1320									
232	Lys	Thr	Val	Glu	Glu	Gly	Glu	Arg	Ile	Ile	Val	Lys	Glu	Val	Glu
233		1325		1330		1335									
234	Glu	Ile	Glu	Glu	Glu	Val	Glu	Lys	Glu	Val	Glu	Lys	Val	Gly	Arg
235		1340		1345		1350									
236	Thr	Glu	Met	Thr	Leu	Phe	Gln	Arg	Leu	Ala	Glu	Gly	Phe	Asn	Glu
237		1355		1360		1365									
238	Leu	Lys	Gln	Asp	Glu	Glu	Asn	Phe	Val	Arg	Glu	Leu	Ser	Lys	Glu
239		1370		1375		1380									
240	Glu	Met	Glu	Phe	Leu	Asp	Glu	Ile	Lys	Met	Glu	Ala	Ser	Glu	Val
241		1385		1390		1395									

RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/09/075,375E

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Input Set : N:\EBONY'S\US09075375E.raw.txt
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Invalid Line Length:

The rules require that a line not exceed 72 characters in length. This includes spaces.

Seq#:7; Line(s) 687,691

Invalid <213> Response:

Use of "Artificial" only as "<213> Organism" response is incomplete,
per 1.823(b) of New Sequence Rules. Valid response is Artificial Sequence.

Seq#:7,8,9

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/075,375E

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Input Set : N:\EBONY'S\US09075375E.raw.txt

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L:6 M:270 C: Current Application Number differs, Wrong Format

STATISTICS SUMMARY

PATENT APPLICATION: US/09/075,375E

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Input Set : N:\EBONY'S\US09075375E.raw.txt

Output Set: N:\CRF4\07222003\I075375E.raw

Application Serial Number: US/09/075,375E

Alpha or Numeric or Xml: Numeric

Application Class:

Application File Date: 05-07-1998

Art Unit: 1600

Software Application: PatentIN3.2

Total Number of Sequences: 9

Total Nucleotides: 5163

Total Amino Acids: 4248

Number of Errors: 0

Number of Warnings: 0

Number of Corrections: 1

MESSAGE SUMMARY

270 C: 1 (Current Application Number differs)